

Finding of No Significant Impact

Fort Carson Construction and Operation of an Unmanned Aerial Systems Training Complex at Training Area 17 North, Fort Carson, Colorado

Fort Carson has prepared an Environmental Assessment (EA) (APR 2016) that evaluated the potential environmental impacts of the Army's proposal to construct and operate an Unmanned Aerial Systems (UAS) training complex at Training Area 17 North (TA17N) on Fort Carson.

UAS operations and UAS facility operations at Fort Carson have previously been assessed. In 2004, Fort Carson prepared an EA which discussed the need for providing facilities for the operation and maintenance of Tactical Unmanned Aerial Vehicles (TUAV) training at Fort Carson. In 2007 and 2009 Fort Carson prepared EISs (Fort Carson Transformation and Implementation of Fort Carson Grow the Army Stationing Decisions, respectively) that included UAS assets. UAS technical and operational parameters have not changed in an environmentally significant manner, and the operation of UAS under the Proposed Action does not change the results of the prior analysis. Operations will remain consistent with existing conditions and within Fort Carson's restricted airspace. Therefore, this EA incorporates prior environmental assessments concerning UAS operations and will only further assess the potential impacts of the construction of a new UAS training complex at TA17N at Fort Carson.

Description of the Proposed Action

Fort Carson is proposing the construction of a UAS training complex at TA17N. The proposed construction would consist of a maintenance facility (approximately 6,000 ft²), a runway (1,200 ft in length by 100 ft wide), taxiways, tow-way and aprons, control towers with observation decks (height approximately 13 ft), a vault (waterless) latrine, organizational vehicle parking (about 11,000 ft²), pad, fencing, and utilities (electricity and communications fiber). Total ground disturbance would be approximately five acres.

TA17N is near Drop Zone (DZ) Plateau, however, this DZ is not often utilized. Therefore, as part of the Proposed Action, DZ Plateau will be removed from the range inventory and no longer available for use as a DZ.

No Action Alternative

Under the No Action Alternative, Fort Carson would not be able to construct the UAS training complex. Implementing the No Action Alternative would hamper UAS operations by lack of a dedicated UAS airstrip and facilities. Consequently, Soldiers training at Fort Carson would not receive the required UAS training and would not be deployable to operate UAS in theater situations. This could result in the units to which these Soldiers are assigned not being combat-ready and not meeting stated deployment criteria.

Alternatives Considered and Eliminated from Further Study

Alternatives to the UAS training complex at TA17N on Fort Carson were evaluated and screened. Three other sites were initially considered (Training Areas 7, 16, and 17S) but

were excluded from further analysis based on specific criteria as described in Section 2.3 of the final EA.

No other alternative sites for construction of a new UAS training complex were found within the footprint of Fort Carson restricted airspace due to conflicts with other training activities.

Public Review

Pursuant to Title 32 CFR Part 651.14(b), the Army must make an EA and Draft FNSI available to the public for review and comment for a minimum of 30 days prior to a final decision. The Army will consider all comments submitted by individuals, agencies, or organizations on the Proposed Action, EA, or Draft FNSI, as described in Section 1.5 of the Final EA.

Agency and Tribal Consultation

As noted in Section 1.5 of the Final EA, consultation on proposed construction activities was initiated with the Colorado State Historic Preservation Officer (SHPO), Native American Tribes, and other consulting parties. This consultation was completed prior to a final decision being made on the Proposed Action.

Environmental Consequences

Implementation of the Proposed Action would allow Fort Carson to construct the UAS training complex to serve Fort Carson's training needs. The Proposed Action would result in some adverse effects due to construction. Disturbance of soils and vegetation would occur, and these effects would be cumulative and long-term. There would be negligible impact to US jurisdictional waters and/or wetlands, however Section 404 of the CWA is required to minimize any potential impacts. There would be minimal effects to federal- or state-listed species. Fort Carson consulted with the USFWS to consider the potential impacts for disturbance to a pair of Golden eagles that utilize the area for occasional feeding. The USFWS did not anticipate that the proposed action would impact the eagles, however they identified the need for pre- and post-construction monitoring. The results of this monitoring will assist in determining additional mitigation requirements (if any). There is a minimal potential for negative impacts to utilities.

Mitigation

There is potential for negative effects caused by the construction of the UAS training complex. To minimize this, Fort Carson would incorporate elements of design and BMPs to reduce this potential. Fort Carson would ensure that appropriate measures have been included to mitigate these potential impacts. These measures include, but are not limited to, the following:

- Debris that is not recycled would be disposed of in accordance with the *Integrated Solid Waste Management Plan*
- Use of the installation's sustainability goals to minimize impacts to energy sources

- Prior to ground disturbance due to construction, wildlife surveys will be conducted to ensure no active nests are within the construction footprint
- If the ground disturbing activity is going to be started during MBTA nesting season 15 Apr to 15 Sept annually then prior coordination with DPW-ED Wildlife Office is necessary to conduct clearing surveys for ground/shrub nesting birds to minimize potential MBTA violations
- A Stormwater Pollution Prevention Plan (SWPPP) must be developed in accordance with the Fort Carson SWMP and submitted to the Fort Carson Stormwater Program for review and approval prior to filing a Notice of Intent (NOI) with the U.S. Environmental Protection Agency (USEPA) for coverage under the Construction General Permit (CGP)
- Recommend minimizing potential erosion and sediment transfer from runoff by including construction of a wide and shallow swale around the perimeter of the facility in the grading plan
- Permit applications would include a fugitive dust control plan and would include all land disturbance associated with this project.
- Pre- and post-construction monitoring of Golden eagle foraging behavior.

Conclusion

The attached EA was prepared pursuant to 32 Code of Federal Regulations (CFR) Part 651 and Council on Environmental Quality (CEQ) regulations (Title 40, U.S. Code, Parts 1500-1508) for implementing the procedural requirements of the National Environmental Policy Act (NEPA).

The findings of this EA are that the Proposed Action Alternative, with minor mitigation, would have no significant direct, indirect or cumulative adverse impact on the human or natural environment based on review of the EA, I hereby approve its findings and adopt the mitigation measures outlined in Section 3.0 in the Site-specific Mitigation sections under each resource area.

Therefore, I conclude that with appropriate mitigations, the Proposed Action is not a major federal action that would significantly affect the quality of the environment within the meaning of Section 102(2) (c) of the National Environmental Policy Act of 1969, as amended. Accordingly, no environmental impact statement (EIS) is required.

Joel D. Hamilton
 ✓ JOEL D. HAMILTON
 COL, FA
 Garrison Commander
 Fort Carson, Colorado

27 JUN 16
 Date



**Environmental Assessment for the
Construction and Operation of an Unmanned Aerial Systems Training
Complex at Training Area 17 North
Fort Carson, CO.
June 2016**



Fort Carson
Directorate of Public Works, Environmental Division

ENVIRONMENTAL ASSESSMENT

Construction and Operation of an Unmanned Aerial Systems (UAS)
Training Complex at Training Area 17 North
Fort Carson, CO.

June 2016

Prepared By:

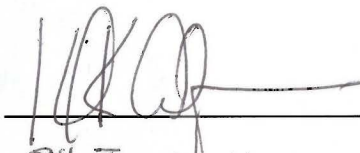
Deb Benford
Fort Carson NEPA Program Manager
Fort Carson, Colorado 80913

Reviewed By:

Directorate of Plans, Training, Mobilization, and Security
Directorate of Public Works
Staff Judge Advocate
Fort Carson, Colorado

Submitted By:


HAL ALGUIRE
Director
Public Works
Fort Carson, Colorado

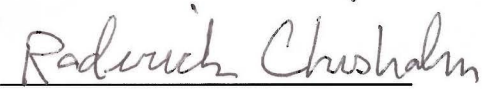


24 Jun 2016

Date

Approved By:

 JOEL D. HAMILTON
COL, FA
Garrison Commander
Fort Carson, Colorado



27 JUN 16

Date

ENVIRONMENTAL ASSESSMENT

Construction and Operation of an Unmanned Aerial Systems (UAS) Training Complex at Training Area 17 North Fort Carson, CO.

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ENVIRONMENTAL ASSESSMENT
Construction and Operation of an Unmanned Aerial Systems (UAS)
Training Complex at Training Area 17 North
Fort Carson, Colorado

1.0 PURPOSE, NEED, AND SCOPE

1.1 Introduction

This Environmental Assessment (EA) was prepared to evaluate the potential impacts of the Army's proposal to construct and operate a reconnaissance Unmanned Aerial Systems (UAS) Training Complex at Training Area 17 North (TA17N) on Fort Carson, Colorado.

The Proposed Action will serve to provide adequate training facilities to conduct its military mission to meet evolving Army training standards. Soldiers need the tactical advantages their unmanned aerial systems provide to be integrated into their units. An unmanned aerial vehicle (UAV), commonly known as an unmanned aircraft system (UAS) and/or drone, and also referred to by several other names, is an aircraft without a human pilot aboard. The unmanned, over-the-horizon reconnaissance, surveillance and target acquisition makes UAS operations a forerunner in providing situational analysis to Soldiers on the battlefield. It provides ground commanders a perspective on something they can't always see from a tactical operations center. Recent successes of UAS support for ground troops' survivability and the gathering of intelligence, point to the need for a robust and trained UAS force.

This section presents the purpose and need for the Proposed Action, defines the scope of the environmental analysis and issues to be considered, identifies decisions to be made, and identifies other relevant documents and actions.

UAS operations and UAS facility construction for the Shadow UAS at Fort Carson have previously been assessed. In 2004, Fort Carson prepared an EA which discussed the need for providing facilities for the operation and maintenance of Tactical Unmanned Aerial Vehicles (TUAV) training at Fort Carson. In 2007 and 2009 Fort Carson prepared EISs (Fort Carson Transformation and Implementation of Fort Carson Grow the Army Stationing Decisions, respectively) that included UAS assets. UAS technical and operational parameters have not changed in an environmentally significant manner, and the operation of UAS under the Proposed Action does not change the results of the prior analysis. Operations will remain consistent with existing conditions and within Fort Carson's restricted airspace. Therefore, this EA incorporates prior environmental assessments concerning UAS operations and will only further assess the potential impacts of the construction of a new reconnaissance UAS training complex at TA17N at Fort Carson.

1.2 Purpose and Need for Proposed Action

In 2004, an EA was conducted for the construction and operation of a Shadow UAS facility adjacent to the Butts Army Air Field (BAAF) in the Wilderness Road Complex. In 2012, Headquarters, Department of the Army (HQDA) made the decision to station a Combat Aviation Brigade (CAB) at Fort Carson to include ensuring adequate facilities requirements were met (Fort Carson, 2012). Construction of facilities to support the CAB at the Wilderness Road Complex and BAAF, made the location of the earlier reconnaissance UAS facility incompatible with the CAB buildout. This prompted the need to construct a new reconnaissance UAS facility further away from the BAAF.

The purpose of the Proposed Action is to provide support facilities for the operation and maintenance of a reconnaissance UAS training complex within existing military restricted airspace at Fort Carson.

The need for the Proposed Action is for effective and efficient facilities in support of the training and flight operations of reconnaissance UAS, and in support of assigned Soldiers' preparation for future deployments and wartime readiness capabilities. Currently, Fort Carson has eight Shadow [UAS] platoons with only one UAS airstrip located at Camp Red Devil (CRD). The CRD airstrip can safely only accommodate two Shadow platoons at one time. CRD is approximately 13 miles from BAAF, which geographically cannot support daily flight operations, therefore the Shadow platoons have to deploy to CRD to conduct this training, increasing unit operating costs (fuel, meals, maintenance, etc.). CRD airstrip is also regularly used by other military aircraft and units, further limiting its availability for UAS flight operations.

1.3 Scope of Analysis

This EA analyzes effects of construction of a reconnaissance UAS training complex at TA17N on Fort Carson.

This EA has been developed in accordance with the National Environmental Policy Act (NEPA) of 1969 and implementing regulations issued by the President's Council on Environmental Quality (CEQ) published in 40 Code of Federal Regulations (CFR) Parts 1500-1508 and the Army's NEPA-implementing procedures published in 32 CFR Part 651, *Environmental Analysis of Army Actions (Army Regulation [AR] 200-2)*. This EA facilitates the Installation's planning and informed decision-making, helping the Garrison Commander and the public to understand the potential extent of environmental impacts of the proposed action and alternatives, and whether those impacts (direct, indirect, and cumulative) are significant.

This EA describes the potential environmental consequences resulting from the Proposed Action and the Alternatives on the following resource areas: Air Quality and Greenhouse Gases, Soils, Water Resources, Biological Resources, Cultural Resources, and Utilities. A brief description of issues eliminated from further analysis is in Section 3.1, *Valued Environmental Components (VECs) Not Addressed*.

1.4 Decision(s) to Be Made

The decision to be made is whether or not to implement the Proposed Action and if implementation would cause significant impacts to the human or natural environment. The final decision is the responsibility of the Garrison Commander at Fort Carson. If no significant environmental impacts are determined, based on the evaluation of impacts in the EA, a Finding of No Significant Impact (FNSI) will be signed by the Garrison Commander. If it is determined that the Proposed Action will have significant environmental impacts, either the action will not be undertaken, or a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) will be published in the *Federal Register*.

1.5 Agency and Public Participation

Public participation opportunities with respect to this EA and decision-making on the Proposed Action are guided by 32 CFR Part 651, *Environmental Analysis of Army Actions (AR 200-2)*. Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. All agencies, organizations, and members of the public having an interest in the Proposed Action, including minority, low-income, disadvantaged, and Native American groups, were given the opportunity to comment on this EA.

The Proposed Action and the entire record were reviewed and the Agency determined the foreseeable impacts and the need for mitigation remained within the assessment parameters described herein. The EA and Draft FNSI, with mitigation measures were made available to the public for 30 days, beginning from 4 May, 2016 (the last day of publication of the Notice of Availability (NOA) in the local media) and ending on 6 June, 2016. The documents were available at:

<http://www.carson.army.mil/DPW/nepa.html>

Anyone wishing to comment on the Proposed Action or request additional information could contact the Fort Carson NEPA Coordinator, Directorate of Public Works; Environmental Division at: usarmy.carson.imcom-central.list.dpw-ed-nepa@mail.mil

At the conclusion of the 30-day public review period, the Army was to consider all comments submitted by individuals, agencies, or organizations on the Proposed Action, EA, or Draft FNSI. No comment letters were received during this period.

Section 106 of the National Historic Preservation Act

With regards to the Proposed Action, consultation in accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations 36 CFR Part 800 was required with the Colorado State Historic Preservation Officer (SHPO), Native American Tribes, and other consulting parties. Consultation included thirteen federally recognized Native American Tribes, who are culturally affiliated with Fort Carson; the El Paso County Commissioners; Colorado Council of Professional Archaeologists; Colorado Preservation, Inc.; and the Tatanka Group, LLC.

See Section 3.6 for more information on cultural resources. Copies of the response letters are included in Appendix B.

1.6 Legal Framework

A decision on whether to proceed with the Proposed Action rests on numerous factors such as mission requirements, schedule, funding availability, safety, and environmental considerations. In addressing environmental considerations, Fort Carson is guided by relevant statutes (and their implementing regulations) and Executive Orders (EOs) that establish standards and provide guidance on environmental and natural resources management and planning. These include, but are not limited to, the following:

- Clean Air Act;
- Clean Water Act;
- Noise Control Act;
- Endangered Species Act;
- Migratory Bird Treaty Act;
- National Historic Preservation Act;
- Archaeological Resources Protection Act;
- Resource Conservation and Recovery Act;
- Toxic Substances Control Act;
- EO 11988, Floodplain Management, as amended;
- EO 11990, Protection of Wetlands;
- EO 12088, Federal Compliance with Pollution Control Standards;
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations;
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risks;
- EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management;
- EO 13175, Consultation and Coordination with Indian Tribal Governments;
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds; and
- EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action. 32 CFR Part 651 (AR 200-2) and Council on Environmental Quality regulations (40 CFR Parts 1500-1508) require the identification of reasonable alternatives to the Proposed Action, including the No Action Alternative. Alternatives sites on Fort Carson were evaluated and screened based on criteria detailed in section 2.3, below. There were no other alternative sites on Fort Carson that met all the siting criteria that could satisfy mission requirements

The Proposed Action is identified as the Army's preferred alternative.

2.1 Valued Environmental Components (VECs) Not Addressed

Initial issue analyses resulted in the elimination of some potential issues because they were not of concern or were not relevant to the Proposed Action and alternatives. Brief discussions of the rationale for these decisions are below.

Environmental Health and Safety Risks for Children

Neither the Proposed Action nor its alternatives would change environmental health or safety risks to children since the area is well within the boundaries of Fort Carson in an area designated for training. Neither the Proposed Action nor its alternatives would have significant or disproportionate adverse effects on children or pose health or safety risks.

Environmental Justice

Neither the Proposed Action nor its alternative would change any existing impacts with regard to minority and low-income populations.

Geology and Topography

Neither the Proposed Action nor its alternatives would have any measurable effects on geologic resources or topography.

Land Use

Training Area 17 is currently military training land. The construction and operation of the UAS training complex would not change the existing land use.

Air Space Use

Neither the Proposed Action nor its alternatives would change existing airspace use on Fort Carson.

Hazardous Waste/Materials

UAS operations have been previously assessed as noted in section 1.1. Neither the Proposed Action nor its alternatives would generate additional hazardous wastes or use additional hazardous materials. The likelihood to encounter contamination on proposed project sites is remote. There is very little oil used in this system and any fueling/defueling operations are conducted with a "closed" pump system. The fueling and defueling of the aircraft is conducted on a dedicated enclosed pad to capture any spillage which is very rare with the Shadow system. Daily operator maintenance is conducted on aircraft to troubleshoot and conduct basic repairs, but maintenance that involves hazardous materials would not take place.

UAS fuel would not be permanently stored on site, but available by fuel trucks when necessary, and any spills would be cleaned up in accordance with the Fort Carson Spill Prevention, Control, and Countermeasures Plan and Fort Carson Regulation 200-1. No heating fuel storage tanks would be required as all power would be electric. An Environmental Protection Plan would be prepared for the project. This plan would

include provisions from other Fort Carson plans, such as the Spill Control Plan, Recycling and Waste Minimization Plan, Contaminant Prevention Plan, and others.

Any discovery of hazardous material contamination would require appropriate regulatory coordination and compliance. If contamination is encountered, appropriate measures would be taken to remediate the site.

Transportation

Neither the Proposed Action nor alternatives would impact traffic patterns on Fort Carson or surrounding communities.

Socioeconomics

There may be a slight beneficial economic impact resulting from the construction of the Proposed Action; however this would be short-term and temporary.

Visual and Aesthetic Resources

Neither the Proposed Action nor alternatives would impact visual or aesthetic resources.

Sustainability

Neither the Proposed Action nor alternatives would impact sustainability as the area is already a training area.

Noise

Neither the Proposed Action nor alternatives would impact noise levels. UAS training already exists at Fort Carson and the Proposed Action would not increase the noise levels. The frequency of noise from UASs may increase, however because UASs must stay within the restricted airspace at Fort Carson, it is not anticipated that the noise would increase outside Fort Carson's boundary. The estimated maximum 1-second average flyover event noise level (dBA) at a slant distance of 2500 feet is 64.2 (2006, US Army). This noise level is comparable to Noise Zone I (USAPHC, 2012).

2.2 No Action Alternative

Consideration of the No Action Alternative is a requirement of the NEPA process. It provides a basis of comparison for the Proposed Action and also addresses issues of concern by avoiding or minimizing effects associated with the Proposed Action.

Under this alternative there would be no construction of the UAS training complex at TA17N. Implementing the No Action Alternative would hamper UAS operations by lack of a dedicated UAS airstrip and facilities. Consequently, Soldiers training at Fort Carson would not receive the required UAS training and would not be deployable to operate UAS in theater situations. This could result in the units to which these Soldiers are assigned not being combat-ready and not meeting stated deployment criteria. Therefore, this alternative will be considered in the environmental consequences analysis to provide a baseline for environmental conditions only.

2.3 Alternative Sites Eliminated from Further Consideration

Alternatives to the UAS training complex at TA17N on Fort Carson were evaluated and screened based on the following criteria:

These criteria must be achieved to meet mission as well as cost requirements for the Proposed Action:

- Meet mission and safety requirements
- avoid impacts on airspace safety zones
- avoid impacts on sensitive resources or allow environmentally sound mitigation to be accomplished within fiscal feasibility
- avoid the need for design measures exceeding fiscal feasibility
- be located in a remote area, yet within easy travel distance from BAAF
- be located within existing Fort Carson restricted airspace
- be situated such that UAS operations would not impact civilian populations

2.3.1 Alternative Sites on Fort Carson

Three other sites were initially evaluated for the construction and operation of a UAS training complex, but have been excluded from further analysis in this EA for the reasons listed below.

Training Area 16 met most of the siting criteria however this location would have negative impacts to current BAAF air corridor structure. It would also require co-use with users of a nearby drop zone (DZ). Environmentally, this location had resident prairie dogs and was identified as one of the areas that eagles used for feeding and training fledglings to hunt.

Training Area 7 met most of the siting criteria however there were no existing facilities or nearby electrical or fiber connectivity, the flight path was very close to two reservoirs frequently used for recreational fishing, had the potential to impact rotary wing traffic at BAAF, and a military supply route could be impaired when flight operations were being conducted.

Training Area 17 South met most of the siting criteria however there is a potential impact to rotary wing routes and a nearby military supply route could be impaired during operations.

No other alternative sites for construction of a new UAS training complex were found within the footprint of Fort Carson restricted airspace due to conflicts with other training activities.

2.4 Proposed Action - Construction of the UAS Training Complex at TA17N

TA17 is in the down range area of Fort Carson. It is situated between Turkey Creek Recreational Area and the Large Impact Area. TA17N is located in the northeast portion of TA 17 (see Figure 2.4).

The Proposed Action for constructing the UAS training complex at TA17N is the Army's preferred alternative as it is relatively close to BAAF, provides a good tactical location with line of sight for the restricted airspace, has nearby electrical connectivity, and has minimal impact on ground maneuver unit training.

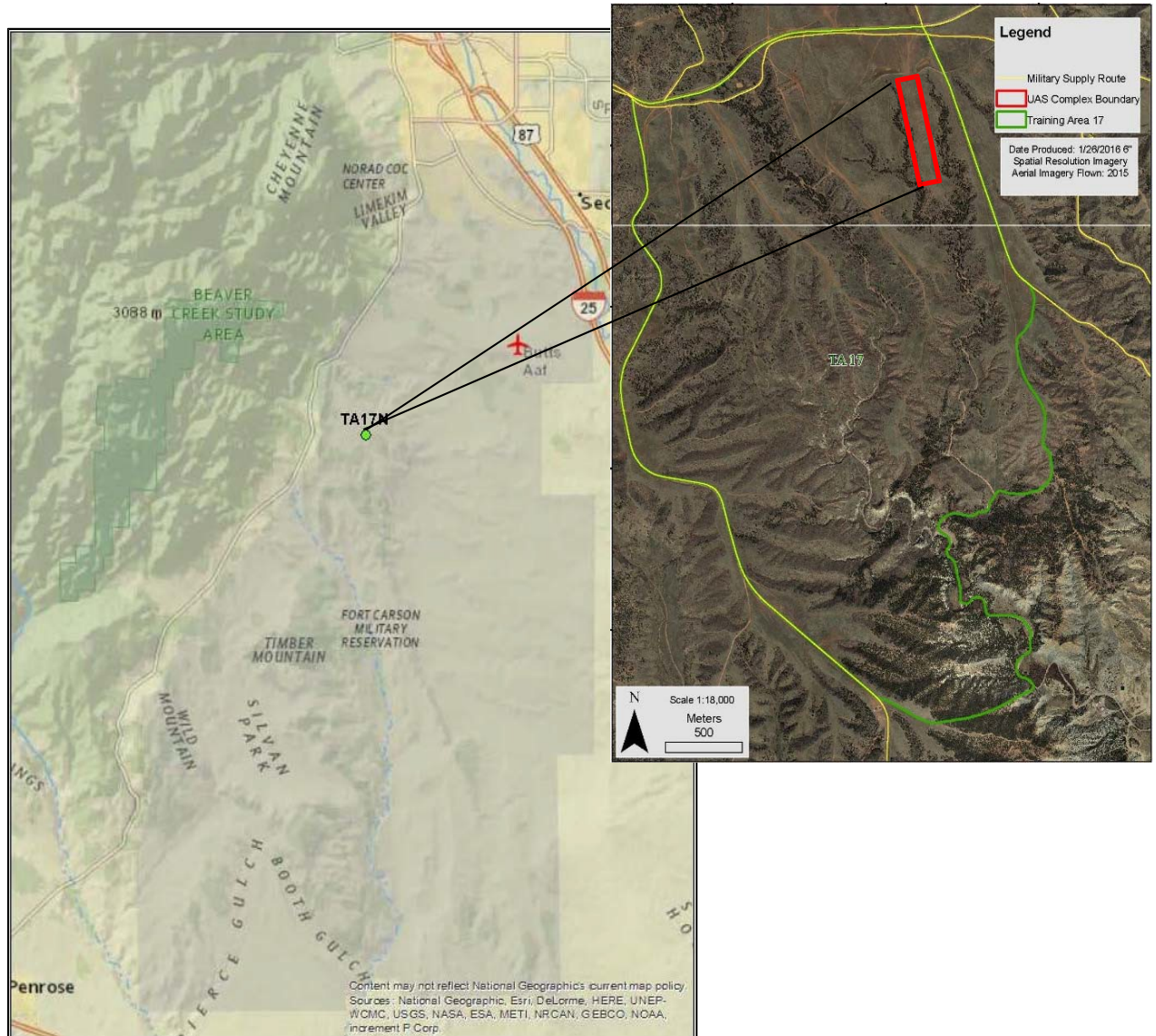


Figure 2.4. Location of TA17N on Fort Carson, CO

The proposed construction of the UAS training complex at TA17N would consist of a maintenance facility (approximately 6,000 ft²), a runway (1,200 ft in length by 100 ft wide), taxiways, tow-way and aprons, control towers with observation decks (height approximately 13 ft), a vault (waterless) latrine, organizational vehicle parking (about 11,000 ft²), pad, fencing, and utilities (electricity and communications fiber). Total ground disturbance would be approximately five acres. The area of interest (AOI) provides sufficient space for additional facilities if necessary. The appropriate level of NEPA analysis would be conducted at the appropriate time for any future construction. The proposed layout for the UAS training complex and the proposed launch/recovery pattern within the restricted airspace are included in Appendix C.

This site is near DZ Plateau, however, this DZ is not often utilized. Therefore, as part of the Proposed Action, DZ Plateau will be removed from the range inventory and no longer available for use as a DZ.

3.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION

This section discloses potential environmental effects of each alternative and provides a basis for evaluating these effects in context relative to effects of other actions.

Effects can be direct, indirect, or cumulative. Direct effects occur at the same place and time as the actions that cause them, while indirect effects may be geographically removed or delayed in time. CEQ guidance states that a cumulative impact is an effect on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place locally or regionally over a period of time. For the purposes of the cumulative impacts analysis, the Proposed Action Region of Influence (ROI) is defined to include Fort Carson and adjacent lands (including communities around the Installation). Appendix D lists the past, present, and reasonably foreseeable future Army actions (defined as those projects that are well-developed, in mature planning stages, and/or have funding secured), and other actions within the ROI that were reviewed in conducting the cumulative effects analysis.

Conceptual projects, broad goals, objectives, or ideas listed in planning documents that do not meet the above criteria are not considered reasonably foreseeable for the purposes of this analysis.

This EA focuses on resources and issues of concern in the following resource areas:

Air Quality and Greenhouse Gases

Soils

Water Resources

Biological Resources

Cultural Resources

Utilities

Areas with no discernible concerns or known effects, as identified in the issue elimination process (Section 2.1, *Valued Environmental Components (VECs) Not Addressed*), are not included in this analysis.

For ease in comparing environmental effects with existing conditions and mitigation specific to each environmental area of concern, each below section will describe existing conditions, describe the effects of each alternative, identify any cumulative effects on that area of concern, and describe site-specific mitigation. A summary of environmental consequences and general mitigation is provided in Chapter 4.

3.1 General Information – Location and Surrounding Land Uses

Fort Carson is located in central Colorado at the foot of the Rocky Mountains in El Paso, Fremont, and Pueblo counties (Figure 3.1a). Downtown Colorado Springs and Denver lie approximately 8 miles and 75 miles, respectively, to the north, while the City of Pueblo is located approximately 35 miles south of the main post area. Surrounding lands bordering Fort Carson include Colorado Springs to the north, the communities of Fountain, Security, and Widefield, conservation areas, and mixed development to the east, to the south are Pueblo West, privately-owned ranches, and conservation areas, and to the west, Penrose, state parks, and several small communities. (Figure 3.1b).



Figure 3.1a. Location of Fort Carson, Colorado

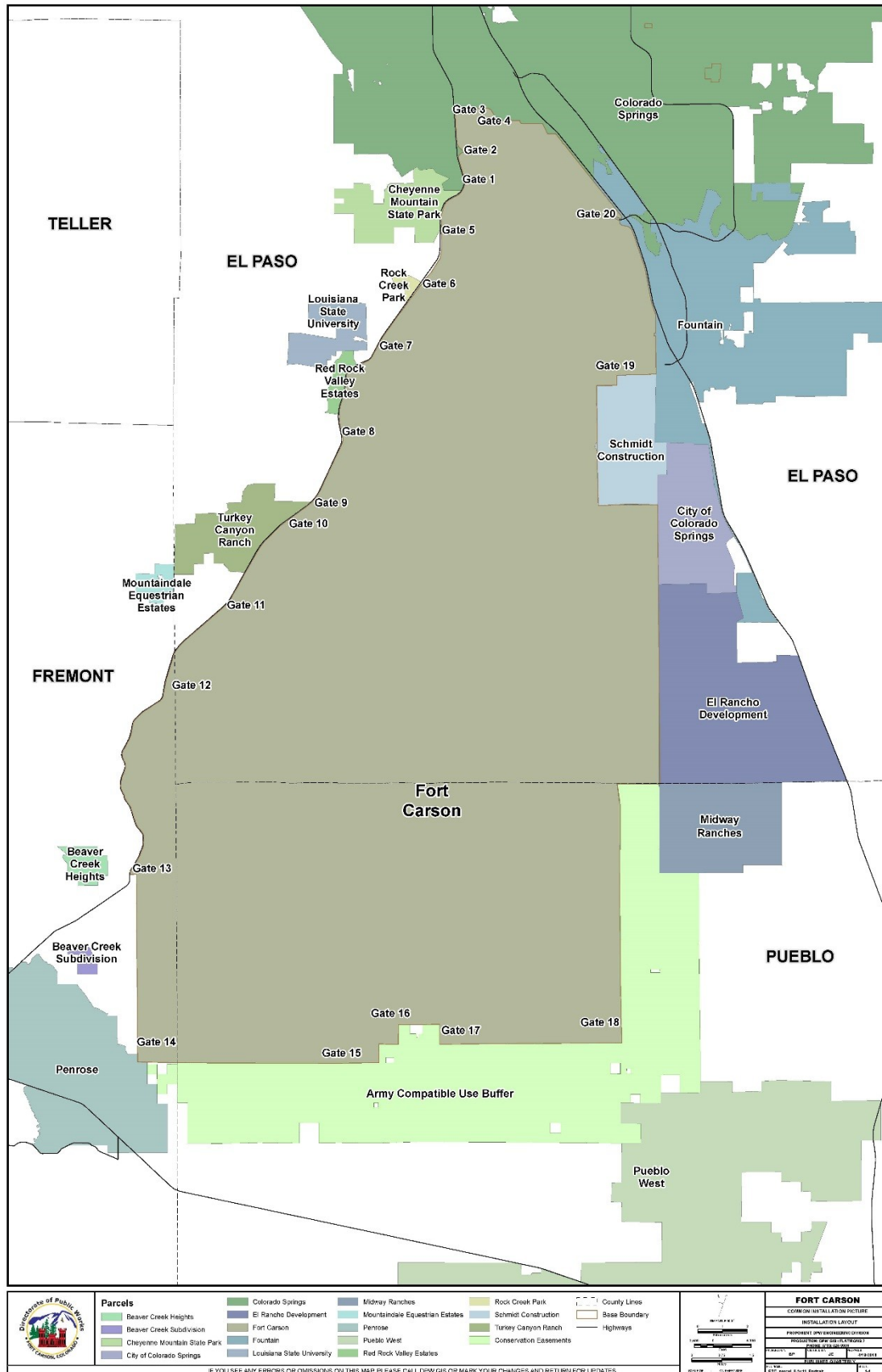


Figure 3.1b Lands Neighboring Fort Carson, Colorado

Fort Carson covers approximately 137,000 acres, and extends between 2 and 15 miles east to west and approximately 24 miles north to south. The main post area, which consists of developed land and a high density of urban uses, is located in the northern portion of the installation and covers approximately 6,000 acres. The downrange area, which is used for large caliber and small-arms live-fire individual and collective training; aircraft, UAS, wheeled and tracked vehicle maneuver operations; and mission readiness exercises, covers approximately 131,000 acres of unimproved or open lands.

Additionally, there are approximately 25,600 acres of Army Compatible Use Buffer (ACUB) lands along the eastern and southern boundaries of the installation. These lands buffer military training activities from neighboring communities and protects the unique local short grass prairie open spaces from future development. The Army reaches out to partners to identify mutual objectives of land conservation and to prevent development of critical open areas to preserve high-value habitat and limit incompatible development in the vicinity of military installations. For more information on the ACUB program visit the U.S. Army Environmental Command's website: <http://aec.army.mil/Services/Conserve/ArmyCompatibleUseBufferProgram.aspx>

Butts Army Airfield is located in the northeast quadrant of the downrange area and is used for command and control of flight operations as well as maintenance and repair of aircraft.

3.1.1 Climate

The region including Fort Carson is classified as mid-latitude semi-arid, characterized by hot summers, cold winters, and relatively light rainfall. July is the warmest month with the average daily maximum temperature of 84.4° Fahrenheit, and January is the coldest with an average daily minimum temperature of 14.5° Fahrenheit.

Mean annual precipitation at Fort Carson increases toward the northwest. Colorado Springs averages 17.5 inches of precipitation annually, with about 80 percent falling between April and September. Average annual snowfall in the region is 42.4 inches. Snow and sleet usually occur from September to May with the heaviest snowfall in March and possible trace accumulations as late as June.

3.2 Air Quality and Greenhouse Gases

3.2.1 Existing Conditions

Fort Carson is within the air quality control areas of El Paso, Fremont, and Pueblo counties, including the City of Colorado Springs. Both Fremont and Pueblo counties are in attainment for all criteria pollutants. The Colorado Springs Urbanized Area in El Paso County is in attainment (meeting air quality standards) for all National Ambient Air Quality Standards (NAAQS) criteria pollutants. However, it was classified as a maintenance area for carbon monoxide (CO) in 1999 due to a 1988 violation of the 8-hour CO standard. This CO maintenance area includes the majority of Fort Carson's main post area (north of Titus Boulevard and Specker Avenue). The BAAF and

Training Area 17N are outside of the attainment/maintenance area. This designation is currently set to run through 2019 (CDPHE, 2009).

Fort Carson stationary and fugitive emission sources, in general, include boilers, high temperature hot water generators, furnaces/space heaters, emergency generators, paint spray booths, fuel storage and use operations, facility-wide chemical use, road dust, military munitions, and smokes/obscurants. Fort Carson's air pollutant emissions generation occurs through the combustion of fossil fuels via equipment such as boilers (a stationary source) and motorized vehicles (a mobile source). Combustion products mainly include Green House Gases (GHGs), predominantly carbon dioxide (CO₂); CO; nitrogen oxide (NO_x); sulfur dioxide (SO₂); and particulate matter (PM), both as inhalable coarse particles (PM₁₀) and fine particles (PM_{2.5}), which is PM whose diameter is less than or equal to 10 and 2.5 micrometers (µm), respectively. Road dust is predominantly a source of PM₁₀.

The Installation manages its air emissions per regulatory requirements, management plans, and Best Management Practices (BMPs) for Fort Carson and the Piñon Canyon Maneuver Site (PCMS). Key among these is its Clean Air Act (CAA) Title V operating permit (No. 95OPEP110) and various construction permits. Fort Carson's BMPs include the Fugitive Dust Control Plan (Fort Carson, 2012b), Integrated Wildland Fire Management Plan (Fort Carson, 2011b), Title V Paint Booth Operating Standards, and Ozone Depleting Compound Management Plan. BMPs support the Installation in ensuring environmental compliance, stewardship, and sustainability.

The EPA has defined three types of GHG emission sources. They are defined as the following:

- Scope 1 – GHG emissions emitted directly from the facility by stationary, fuel burning sources.
- Scope 2 – GHG emissions emitted indirectly from the facility. This includes the purchase of electricity, heat or steam from a utility.
- Scope 3 – GHG emissions not controlled directly by the facility. This includes employee commuting emissions, wastewater treatment, and solid waste disposal.

The Installation's predominant stationary Scope 1 GHG emission sources are on-post boilers at Fort Carson. Scope 2 includes emissions from utilities in providing power to Fort Carson and PCMS.

The Installation reports GHG emissions from Fort Carson, as required, on an annual basis per 40 CFR 98 Subpart C. In 2015, the Army estimated these emissions (Scope 1) to be about 60,000 metric tons CO₂ equivalent per year.

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

The Proposed Action would not change regional air quality conditions. The impacts on air quality and GHG from the implementation of the Proposed Action would be minor.

Construction would have short-term minor adverse impacts on air quality due to minor increases in fugitive dust (i.e., airborne dust caused by vehicles, equipment, and wind) and vehicle emissions caused by the operation of heavy equipment. An additional source of emissions is from the operation of the UAS. The emissions from the UAS were assessed in 2012 during the CAB project and determined to be negligible.

Estimated emissions from the construction and operations under the Proposed Action would be below the threshold for PSD (less than 40 tons/year) and not expected to require changes in air permits for existing stationary emission sources.

The Proposed Action is outside of the carbon monoxide maintenance area and is not subject to New Source Review (NSR) and minor NSR requirements. Additionally, the Proposed Action is not a major stationary source (potential to emit 100/250-tons/year of any pollutant regulated by the Clean Air Act) in accordance with Prevention of Significant Deterioration requirements. The Proposed Action is not anticipated to result in violations of NAAQS.

3.2.2.2 No Action Alternative

The No Action Alternative would require the units to continue travel to CRD for UAS training purposes. Therefore, under the No Action Alternative, there would be no additional impacts to air quality or greenhouse gases associated with the construction and/or operation of the Proposed Action.

3.2.3 Cumulative Effects

Cumulative emissions from construction projects are unlikely to lead to a violation of the NAAQS because regional concentrations would have to double over the existing emissions to approach the regulatory threshold. The amount of emission increases anticipated during construction, operations, and military training is not anticipated to have a significant adverse cumulative effect, and violations of NAAQS are not anticipated. Environmental effects from past and current Army actions, when added to the anticipated environmental effects of the Proposed Action, would not result in any significant long-term effects to air quality because operations are within construction permit and fugitive dust permit requirements. These requirements are designed to ensure that emissions do not significantly affect air quality. Temporary and minor increases in air pollution would occur from the use of construction equipment (combustion emissions) and the disturbance of soils (fugitive dust) during construction. The air emissions from the proposed operational activities do not exceed Federal *de minimis* thresholds. The impacts on air quality and GHG from the implementation of this alternative would be minor.

3.2.4 Site-specific Mitigation

The construction contractor and Omaha District, U.S. Army Corps of Engineers would submit any required construction and/or land development construction permit applications. Applications would include a fugitive dust control plan and would include all land disturbance associated with this project. Short-term air quality degradation

would occur during the construction phase but would be mitigated by a variety of fugitive dust control measures.

Appropriate emission control devices on vehicles and equipment used for construction would minimize effects to air quality. Heating and air conditioning equipment would be regularly maintained to minimize the risk of above-normal emissions from these units.

3.3 Soils

3.3.1 Existing Conditions

The soil compositions and soil descriptions of the proposed construction of the UAS training complex were collected from the Natural Resources Conservation Service (NRCS), U.S. Department of Agriculture (USDA) (NRCS 2016). The Area of Interest (AOI) encompasses approximately 115 acres. There are three soil types described within the AOI. They are Bresser sandy loam (3 to 5 percent slopes), Bresser sandy loam (5 to 9 percent slopes), and Nederland cobbly sandy loam (9 to 25 percent slopes). Appendix E contains a map of the AOI and information on the major soil types within the area.

Bresser sandy loam (3 to 5 percent slopes) encompasses about 42% of the AOI (approximately 48 acres). It is a well-drained soil with moderate available water storage in the profile (about 6.5 inches). A typical profile is 0 to 8 inches sandy loam, 8 to 27 inches sandy clay loam, 27 to 36 inches sandy loam, and 36 to 60 inches loamy coarse sand. Its depth to restrictive feature is greater than 80 inches.

Bresser sandy loam (5 to 9 percent slopes) encompasses about 5% of the AOI (approximately 6 acres). It is a well-drained soil with moderate available water storage in the profile (about 6.5 inches). A typical profile is 0 to 8 inches sandy loam, 8 to 27 inches sandy clay loam, 27 to 36 inches sandy loam, and 36 to 60 inches loamy coarse sand. Its depth to restrictive feature is greater than 80 inches.

Nederland cobbly sandy loam (9 to 25 percent slopes) encompasses about 53% of the AOI (approximately 62 acres). A typical profile is 0 to 5 inches cobbly sandy loam, 5 to 11 inches very cobbly loam, 11 to 28 inches very cobbly clay loam, 28 to 60 inches very cobbly sandy loam. Its depth to restrictive feature is greater than 80 inches. The available water storage in the profile is low at about 4.5 inches.

3.3.2 Environmental Consequences

3.3.2.1 Proposed Action

The construction disturbance would impact the soils by removing vegetation within the area and making it prone to wind and water erosion. However, this would be temporary during construction. Upon completion of the construction, the area would be stabilized and BMPs employed. Further, this area would be for UAS operations and vehicle traffic would be confined to the roads to deliver the UASs and assigned personnel to the operations area. If necessary, BMPs such as turnouts, sediment traps, hardening, etc. could be applied.

Although the soils are relatively well drained, they are also fairly erodible on steeper slopes. During high-intensity rainfall events, it is possible that on occasion the runoff from impervious surfaces of the new facility could overwhelm the capacity of the soils to absorb the water, and excess runoff could erode the side slopes of the ridge on which the facility is sited.

Overall, the effects of construction under the Proposed Action would be minor, and easily controlled by standard BMPs. Effects of operations under the Proposed Action would be minimal, due to the nature of the training.

3.3.2.2 No Action Alternative

There would be no changes in air quality under the No Action alternative.

3.3.3 Cumulative Effects

Negative effects from construction projects and training on Fort Carson would continue, however continual use BMPs, restoration and rehabilitation, cumulative effects are anticipated to be negligible.

3.3.4 Site-specific Mitigation

Recommend minimizing potential erosion and sediment transfer from runoff by including construction of a wide and shallow swale around the perimeter of the facility in the grading plan. Swales would be replanted to perennial native grass species in accordance with the approved Fort Carson range seed mix. The swales would collect stormwater runoff and allow it to percolate into the ground.

3.4 Water Resources

Fort Carson policy is to eliminate or minimize the degradation of all water resources on Fort Carson and ensure compliance with all applicable federal, state and local water quality standards (Fort Carson Regulation 200-1). Water resources are managed in coordination with U.S. Geological Survey (USGS), NRCS, U.S. Fish and Wildlife Service (USFWS), and many other external agencies. The *Water Resources Management Program* on Fort Carson includes watershed/sedimentation monitoring and management and project reviews to address erosion and sediment control issues. In addition, the *Stormwater Management Plan* (Fort Carson 2016) is designed to reduce the discharge of pollutants from Fort Carson to drainage ways, to protect water quality, and to satisfy Colorado's water quality standards.

3.4.1 Existing Conditions

3.4.1.1 Surface Water and Watersheds

The primarily undeveloped southern and western portions of Fort Carson drain into the Arkansas River to the south. The highly developed and industrialized portion of Fort Carson (the main post area) consists of four tributaries within the Fountain Creek watershed that provide local surface drainage: B Ditch, Clover Ditch, Infantry Creek (formerly known as Central Unnamed Ditch), and Rock Creek. The constituent of concern in Fort Carson's portion of the Fountain Creek watershed is *E. coli* (5 Code of Colorado Regulation [CCR] 1002-93, Colorado Regulation #93). Fountain Creek also

ultimately discharges to the Arkansas River. The main document that currently guides surface water and watershed management at Fort Carson is the Fort Carson Stormwater Management Plan (SWMP) (Fort Carson, 2016). This SWMP is designed to reduce the discharge of pollutants from Fort Carson to the maximum extent practicable and to protect water quality.

The proposed UAS training complex is within the Crooked Canyon Watershed, which is a tributary to Fountain Creek.

3.4.1.2 Hydrogeology and Groundwater

Groundwater at Fort Carson exists in both alluvial and bedrock aquifers. The primary aquifer at Fort Carson is the Dakota-Purgatoire bedrock aquifer. In general, the quality of the groundwater on Fort Carson is good with the exception of localized areas of high dissolved solids and sulfates exceeding secondary drinking water standards and elevated nitrates and Selenium (Se) exceeding primary drinking water standards.

A site wide Selenium (Se) study looking at the occurrence and distribution of Se in groundwater at Fort Carson was conducted in August 2011 (Summit Technical Resources, 2011), with results coordinated with and concurred on (2011) by the Colorado Department of Public Health and Environment (CDPHE). Se has been detected at concentrations greater than the Colorado Ground Water Standard (0.05 milligrams per liter [mg/L] (0.05 parts per million [ppm])) and the Fort Carson background concentration (0.27 mg/L [0.27 ppm]) in samples collected from groundwater monitoring wells located primarily within Fort Carson's main post area. Analysis of qualitative and quantitative data from this study indicates a naturally occurring source (Pierre Shale) for relatively high Se concentrations in Fort Carson's compliance monitoring wells (Summit Technical Resources, 2011).

There is a spring and small associated wetland directly downstream approximately three kilometers south of the proposed UAS training complex site.

3.4.1.3 Floodplains

EO 11988, *Floodplain Management*, as amended in 2015 requires federal agencies to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative and to use natural systems, ecosystem processes, and nature-based approaches when developing alternatives for consideration. To accomplish this objective, the Army is required to take actions to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains for certain federal actions. The acquisition, management, and disposal of federal lands and facilities are specific qualifying federal actions addressed within the EO. Subsequently, the EO requires the application of accepted flood-proofing and other flood protection measures for new construction of structures or facilities within a floodplain. Agencies are required to achieve flood

protection, wherever practicable, through elevation of structures above the elevation of the floodplain rather than filling in land.

3.4.2 Environmental Consequences

3.4.2.1. Proposed Action

There is a potential for sediment migration to the spring that lies south of the proposed UAS training complex, however with appropriate BMPs and stabilization of disturbed soils, the impacts are anticipated to be negligible. Construction and operation of the Proposed Action must meet the regulatory requirements of the Clean Water Act (CWA) Section 404 for wetlands and Section 402 under the National Pollutant Discharge Elimination System (NPDES) as it applies to Fort Carson's Municipal Separate Storm Sewer System (MS4), the Multi-Sector General Permit (MSGP) for Industrial Discharges, and the Construction General Permit (CGP); therefore impacts would be minimized in order to remain in compliance.

3.4.2.2 No Action

Under the No Action Alternative, there would be no change to water quality from construction or operation of the Proposed Action.

3.4.3 Cumulative Effects

Cumulative effects on water resources would be slightly greater during construction, and on a permanent basis as well as due to the addition of impervious surface for the complex. The impacts, however, would not be significant, and would be mitigated by use of BMPs during construction and directing runoff from new impervious surfaces to the surrounding pervious areas. In addition, a requirement of the CGP is the re-establishment of existing vegetation which would reduce the potential for erosion and sedimentation. After construction and during utilization, the UAS training complex will be monitored by Integrated Training Area Management (ITAM) personnel to evaluate the land condition and employ proper rehabilitation methods as necessary.

3.4.4 Site-specific Mitigation

A Stormwater Pollution Prevention Plan (SWPPP) must be developed in accordance with the Fort Carson SWMP and submitted to the Fort Carson Stormwater Program for review and approval prior to filing a Notice of Intent (NOI) with the U.S. Environmental Protection Agency (USEPA) for coverage under the Construction General Permit (CGP). Per the CGP permit requirements, all disturbed areas must be stabilized (i.e. landscaping, seed, gravel, etc.) to achieve a stabilization rate of 70 percent of the preexisting condition prior to project completion. Reseeding must only be conducted with Fort Carson approved methods and seed mixes. The Fort Carson Stormwater Program must inspect the construction site and approve the Notice of Termination (NOT) prior to the submittal of the NOT to the USEPA.

The Department of the Army and Fort Carson's MS4 permit also require permanent low impact development features or post-construction stormwater BMPs to be utilized for compliance. These structures will mitigate water quality impacts as well as minimize the velocity and flow of runoff.

3.5 Biological Resources

3.5.1 Existing Conditions

Additional information regarding flora and fauna on Fort Carson is in *Fort Carson's Integrated Natural Resource Management Plan* (INRMP) (Fort Carson 2013). Unless stated otherwise, below information is from those sources.

3.5.2 Vegetation

The *Fort Carson* INRMP (Fort Carson, 2013) contains detailed descriptions of the vegetative communities on Fort Carson and a listing of common and scientific names of plant species known to occur. Integrated Pest Management is used to manage invasive plant populations, such as the exotic invasive tamarisk (*Tamarix ramosissima*), as mandated by DoD. Integrated Pest Management includes biological, chemical, mechanical, and cultural management techniques. As reported in the 2011 *CAB Stationing PEIS*, the main post area and BAAF consist primarily of non-native ornamentals and large trees. Within flight pattern zones of BAAF, non-native ornamentals and large trees are removed for aircraft operational needs and to reduce the occurrence of bird air strike hazard (BASH). The Wilderness Road Complex area, with vegetation considered to be in fair condition, consists primarily of a mix of disturbed land, western wheatgrass/blue grama, small soapweed/blue grama, and big bluestem/little bluestem. Further details on vegetation, including noxious weeds, are available in the 2009 *Fort Carson Grow the Army FEIS* (Fort Carson, 2009).

There are no State listed noxious weeds within the area of interest of the proposed TA17N UAS training complex, however the invasive plant, Dalmation toadflax (*Linaria dalmatica*) occurs approximately 1,700 meters south of the site.

3.5.3 Wildlife, including Threatened and Endangered (T&E) Species

Federally Listed Species

The Endangered Species Act defines an endangered species as any species in danger of extinction throughout all or a major portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future. Candidate species are those for which the USFWS has sufficient information on their biological status and threats to propose them as endangered or threatened, but listing is precluded by other higher priority species. Table 3.5-3 presents federally-listed endangered, threatened, and candidate species found on Fort Carson. No critical habitat for these species has been designated on Fort Carson.

Table 3.5-3a Federally-Listed Endangered, Threatened, and Candidate Species Known to occur at Fort Carson

Species	Scientific Name	Species Type	Status	Distribution on Fort Carson
Mexican spotted owl	<i>Strix occidentalis</i>	Bird	T	Rare winter resident
Arkansas Darter ¹	<i>Etheostoma cragini</i>	Fish	C	Introduced to multiple sites on Fort Carson

Black-footed ferret	<i>Mustela nigripes</i>	Mammal	E	Migrated onto Fort Carson from reintroduction area
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Source: Fort Carson, 2013

¹Species is also identified as state-listed.

C- Candidate

T- Threatened

E- Endangered

Mexican Spotted Owl –Threatened Species

The Mexican Spotted Owl occasionally winters in rugged forested canyons west of Fort Carson. It is a rare winter resident on Fort Carson and known to have occurred only on and adjacent to Booth Mountain. It is not known if the species is present annually. A radio tagged owl present on Fort Carson in the winter of 1995-1996 did not return in subsequent years. The species is not suspected of breeding on Fort Carson.

Arkansas Darter- Candidate Species

The Arkansas darter is a federal candidate for listing as a threatened species. The darter is found at a few sites on the installation. It is not known to occur within the project area.

Black-footed ferret – Endangered Species

The Black-footed ferret was reintroduced on adjacent private landowner property in October of 2013. Fort Carson obtained a Programmatic Safe Harbor Agreement as well as the associated Biological Opinion, from the USFWS, to ensure no land use restrictions would occur as a result of the ferret reintroduction action. The only area the ferret is known to occur on Fort Carson is in close proximity to the southern boundary.

There are several species that are Federal Candidates, Federal Birds of Conservation Concern, State threatened, endangered, or Species of Special Concern that may occur on Fort Carson. An exhaustive list and detailed accounts of all species that occur on Fort Carson can be found in the INRMP (Fort Carson, 2013). Those species that occur or could occur in the proposed project site are discussed in the following paragraphs and Table 3.5.3b for avian species not discussed in paragraph form.

Black-tailed Prairie Dog

The black-tailed prairie dog, a former candidate for federal listing, is common on Fort Carson, but numbers are decreasing. In 2009, there were 65 colonies totaling 6,513 acres and in 2013, 77 colonies were mapped, totaling 2,702 acres. It is listed as a Species of Special Concern in Colorado by the CPW and the CNHP. Frequently referred to as a keystone species of the shortgrass prairie ecosystem, the prairie dog plays a significant role in life cycles of several Species of Special Concern on Fort Carson: the ferruginous hawk, bald and golden eagles, mountain plover, and the state-listed burrowing owl. Prairie dogs are managed on Fort Carson according to

prescriptions detailed in the installation's management plan for the black-tailed prairie dog. The plan balances conservation with human health and property loss and details circumstances for lethal control of the species on Fort Carson. There is a prairie dog colony north of the proposed site.

Colorado Checkered Whiptail

The Colorado checkered whiptail species is only found in areas of southeastern Colorado (Walker *et. al.* 1997) and is currently being evaluated by USFWS for listing as a Candidate species under ESA. It is currently listed by CPW and USFWS as a species of special concern. The Colorado checkered whiptail habitat occurs in valleys, arroyos (dry creeks), canyons, and on hillsides, in areas dominated by plains grassland or juniper woodland, including areas such as parks with frequent human use and habitat disturbance (Walker *et. al.* 1997). Little is known about the whiptail on Fort Carson, except occurrence has been documented.

Mountain Plover

The mountain plover is listed as a Species of Special Concern by the USFWS. Mountain plovers are rare on Fort Carson, and only a small percent of available habitat is occupied. Surveys for this species are conducted annually and it is not known to occur in or near the project area.

Burrowing Owl

The burrowing owl is listed as state threatened by CPW. The burrowing owl is a small, burrow-dwelling owl nesting underground in unoccupied prairie dog burrows. The burrowing owl is not abundant on Fort Carson and the number of prairie dog colonies annually occupied by this species is low (Fort Carson, 2013). Although sylvatic plague does not directly influence nesting burrowing owls, they generally do not nest in colonies where all prairie dogs have been killed by plague. There have been no burrowing owl sightings in the nearest prairie dog colony north of the proposed project area. In 2008, a pair of burrowing owls nested approximately 500 meters north of the proposed site.

Golden Eagle

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) of 1940. The proposed site is in close proximity (south) of a prairie dog colony. This prairie dog colony is one of the foraging grounds for a pair of golden eagles that nest at Cheyenne Mountain.

Table 3.5-3b Additional avian species of concern that occur or have the potential to occur at the proposed UAS training complex

Species	Habitat	Status	Comment
Bald Eagle	TR, PR	BCC, SC	OS
Black Rosy Finch	TR	BCC	P
Black Swift	TR, PR	BCC	P, MI
Bobolink	PR	BCC	P
Brewer's Sparrow	PR	BCC	OFC

Brown-capped Rosy Finch	TR	BCC	P
Cassin's Finch	TR	BCC	P
Cassin's Sparrow	PR	BCC	OFC
Chestnut-collared Longspur	PR	BCC	OFC, MI
Dickcissel	PR	BCC	OFC
Ferruginous Hawk	PR	BCC, SC	OS
Flammulated Owl	TR	BCC	P
Grasshopper Sparrow	PR	BCC	OS
Juniper Titmouse	TR	BCC	P
Lark Bunting	PR	BCC	OFC
Lewis's Woodpecker	PR	BCC	OFC
Loggerhead Shrike	PR	BCC	OS
Long-billed Curlew	PR	BCC, SC	OFC
McCown's Longspur	PR	BCC	MI
Olive-sided Flycatcher	TR	BCC	MI
Peregrine Falcon	PR, TR	BCC, SC	OFC
Pinyon Jay	TR	BCC	OFC
Prairie Falcon	PR	BCC	OS
Sage Thrasher	PR	BCC	OS
Short-eared Owl	PR, TR	BCC,	P
Swainson's Hawk	PR	BCC	OS
Upland Sandpiper	PR	BCC	P
Veery	TR	BCC	MI
Virginia's Warbler	TR	BCC	P
Williamson's Sapsucker	TR	BCC	P
Willow Flycatcher	PR, TR	BCC	MI

Habitat Codes: TR = Tree, PR = Prairie

Status Codes: FT = Federally Threatened, BCC = USFWS bird of Conservation Concern
ST = State Threatened, SC = State Special Concern

Comment Codes: OS = observed at or near site, OFC = observed is similar habitat as site,
P = Possible occurrence in association with prairie or adjacent tree habitat, MI = May occur as
migrant at site or in airspace

3.5.4 Wetlands

Wetlands and activities within them are regulated by Section 404 of the Clean Water Act (CWA) administered by the US Army Corps of Engineers (USACE). There are no jurisdictional wetlands within the AOI of the Proposed Action. There is a small spring and associated wetland approximately three kilometers south of the AOI.

3.5.5 Environmental Consequences

3.5.5.1 Proposed Action

Vegetation

There would be a minor temporary impact to vegetation due to site preparation for construction. No long term negative impacts are anticipated from the development or use of the proposed UAS training complex.

Wildlife

Black-tailed Prairie Dog

There is a black-tailed prairie dog colony north of, but not within the proposed project area. There would be no anticipated impact from the construction of the UAS training complex.

Colorado Checkered Whiptail

This species is not known to occur in or near the project area.

Golden Eagle

Fort Carson consulted with the USFWS to consider the potential impacts for disturbance to a pair of Golden eagles that utilize the area for occasional feeding. The USFWS did not anticipate that the proposed action would impact the eagles, however they identified the need for pre- and post-construction monitoring. The results of this monitoring will assist in determining mitigation requirements (if any).

Wetlands

There are no wetlands within the proposed project area. No impacts to wetlands are anticipated from implementation of the Proposed Action.

3.5.5.2 No Action

Vegetation

Under the No Action Alternative, there would be no change to vegetation from the Proposed Action.

Wildlife

Under the No Action Alternative, there would be no change to wildlife from the Proposed Action.

Wetlands

Under the No Action Alternative, there would be no change to wetlands from the Proposed Action.

3.5.6 Cumulative Effects

Vegetation

Cumulative, long term impacts would be classified as minor as TA 17N is currently and has been utilized for multipurpose training. The proposed action includes continuation of a number of management measures, such as described in the INRMP, and mitigations to avoid and minimize these impacts.

Wildlife

The proposed action results in a variety of potential cumulative impacts, including mortality, disturbance, or displacement, and loss of habitat of nesting or foraging territory. The proposed action includes continuation of a number of management measures, such as described in the INRMP and mitigations to avoid and minimize these impacts.

Wetlands

Cumulative impacts for the proposed action in combination with other present and planned future actions are and would continue to occur at Fort Carson and in the region. Fort Carson will continue to play a key role in sustaining wetlands through its land management and natural resources programs to minimize these impacts as well as continued compliance with the CWA and Section 404.

3.5.7 Site-specific Mitigation

Vegetation

Under EO 13112 (1999), Fort Carson is dedicated to prevention of the introduction of invasive species and strives to control populations and prevent spread.

Wildlife

Pre- and post-construction monitoring of the Golden eagles foraging near the proposed site.

Prior to ground disturbance due to construction, wildlife surveys will be conducted to ensure no active nests are within the construction footprint. If the prairie dog colony is part of construction area then prior coordination with DPW-ED Wildlife Office is necessary to conduct 3 days of Burrowing Owl clearing surveys IAW State protocols. If the ground disturbing activity is going to be started during MBTA nesting season 15 Apr to 15 Sept annually then prior coordination with DPW-ED Wildlife Office is necessary to conduct clearing surveys for ground/shrub nesting birds to minimize potential MBTA violations.

The proposed perimeter fence should include underground fencing, or a fencing skirt, that helps prevent prairie dogs, and other denning mammals from becoming established near the airstrip. Doing so will reduce the likelihood of collisions with raptors. Guidelines in Fort Carson Wildlife Air Strike Hazard plan for fencing, landscaping, and bird exclusion on buildings should be followed.

Wetlands

Continued compliance with the CWA and Section 404.

3.6 Cultural Resources

3.6.1 Existing Conditions

Cultural resources are the non-renewable remnants of past human activities that have cultural or historical value and meaning to a group of people or a society. The term “cultural resources” includes *historic properties*, as defined by the National Historic Preservation Act (NHPA); *cultural items*, as defined by the Native American Graves and Repatriation Act (NAGPRA); *archaeological resources*, as defined by the Archaeological Resources Protection Act; *sacred sites*, as defined in EO 13007, to which access is afforded under American Indian Religious Freedom Act (AIRFA); and *collections*, as defined in 36 CFR Part 79, *Curation of Federally-owned and Administered Archaeological Collections*.

As of March 2016, approximately 99,640 acres of Fort Carson's 137,404 acres have been surveyed for cultural resources, resulting in the recordation of 2,371 buildings, archaeological sites, and isolated finds (IFs), representing every period of human occupation from the Paleoindian stage to the present.

Through consultation with the Colorado State Historic Preservation Officer (SHPO), Native American Tribes, other consulting parties, and the public, Fort Carson has implemented two programmatic agreements (PAs) for compliance with Section 106 of the NHPA: 1) Regarding Construction, Maintenance, and Operational Activities for Select Areas on Fort Carson (Built Environment PA), executed on 27 March 2013; and 2) Regarding Military Training and Operational Activities Occurring Down Range Fort Carson (FC Down Range PA), executed on 31 March 2014.

Fort Carson consults with 13 federally-recognized Tribes who have a cultural affiliation with Fort Carson lands. A Comprehensive Agreement between Fort Carson and 10 Tribes concerning Tribal access, privacy, and the inadvertent discovery of human remains and other cultural items was executed in 2004, and a second Comprehensive Agreement with the Jicarilla Apache Nation was signed in 2005.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

There are three archaeological resources within a 100-meter buffer of the physical area of potential effects (APE). Site 5EP5948 is a prehistoric isolate, consisting of four pieces of lithic debitage; site 5EP5953 is a prehistoric isolate, consisting of two pieces of lithic debitage; and site 5EP5973 is a prehistoric lithic scatter of undetermined age and cultural affiliation. All were recorded during a cultural resources investigation conducted as part of the after action review associated with the TA 25 wildland fire (Burton and Rodgers 2010). These archaeological resources have been determined as ineligible for inclusion in the National Register of Historic Places (NRHP), and therefore are not considered *historic properties* under the NHPA.

Site 5EP5974 is a prehistoric open architectural site of undetermined age and cultural affiliation recorded in 2008 during the after action review for the TA 25 wildland fire event (Burton and Rodgers 2010). The site is eligible for inclusion in the NRHP, and it has also been identified as a possible Traditional Cultural Property (TCP), significant to one or more Native American Tribes. Although 5EP5974 is approximately 230 meters west of the physical area of potential effect (APE) on a separate landform, consideration of potential visual aspects to the APE was discussed during the Section 106 consultation process.

The FC Down Range PA exempts the type of military training that is proposed at the UAS training complex per Appendix 1. However, construction of the UAS training complex occurs outside an existing range footprint, which is not considered an exempted undertaking. Consultation was completed with the SHPO, Tribes, and other consulting parties in accordance with 36 CFR 800 on June 21, 2016. Concurrence with the Proposed Action was received from the SHPO (HC #70297), the Colorado Council of Professional Archaeologists, the Tatanka Group, the Cheyenne and Arapaho Tribe of

Oklahoma, and the Comanche Nation of Oklahoma. No other comments were received during the consultation period.

3.6.2.3 No Action Alternative

There would be no change in the existing conditions of cultural resources under the No Action Alternative.

3.6.3 Cumulative Effects

As no historic properties are located with the proposed physical APE, it is anticipated that no physical adverse cumulative impacts to cultural resources would be caused as a result of this Proposed Action. Fort Carson's Inadvertent Discovery of Archaeological, Cultural, or Paleontological Materials Standing Operating Procedure (SOP) will apply for construction and training activities. However, possible cumulative visual effects to 5EP5974 were investigated during the Section 106 consultation process.

3.6.4 Site-specific Mitigation

No further site-specific mitigation requirements were identified through the Section 106 consultation process.

3.7 Utilities

3.7.1 Existing Conditions

Fort Carson has long been at the forefront of implementing sustainability practices within the Army. In April, 2011, Fort was selected as a pilot installation for "Net Zero" waste, water, and energy reduction. Net Zero efforts at Fort Carson include three main efforts: 1) produce as much renewable energy on the Installation as it uses annually; 2) limit the consumption of freshwater resources and return water back to the region so as not to deplete the groundwater and surface water resources of that region in quantity or quality; and 3) reduce, reuse and recover waste streams by converting them to resource value with zero solid waste land filling. For specific information about the environmental impacts of Fort Carson's Net Zero initiatives refer to the *Fort Carson Net Zero Waste, Water and Energy Implementation EA* (Fort Carson, 2012c).

Fort Carson's Directorate of Public Works (DPW) manages utilities and infrastructure on Fort Carson. This includes drinking water, waste water, natural gas, electricity and solid waste disposal as well as road and building construction.

Water management includes wells that provide downrange industrial use water, and surface water that provides military training, downrange fire protection, recreational waters, wildlife habitat, and irrigation. Fort Carson purchases its drinking water from Colorado Springs Utilities. In 2013, Fort Carson used approximately 750 million gallons of water. Even with all the growth on Fort Carson, water use since 2001 has been reduced by more than 30 percent through proactive garrison and housing watering policies and initiatives.

The Waste Water Treatment Plant (WWTP) on Fort Carson treats sanitary sewage and Industrial Wastewater Treatment Plant effluent. The WWTP is adequate in size and capacity based upon the projected development.

Stormwater management, solid waste removal, and energy supplies are all adequate for the current community size. Three stormwater permits are utilized at Fort Carson as part of the storm water program: the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Activities in Colorado (COR12000F), Municipal Separate Storm Sewer Systems (MS4) Permit (COR042001), and the United States Environmental Protection Agency's (USEPA's) MSGP for Industrial Activities (COR05F003). Currently, all solid waste from Fort Carson, including waste from housing units, is shipped to offsite landfills by a licensed contractor. Fort Carson has an extensive recycle program.

Fort Carson purchases natural gas and electricity from Colorado Springs Utilities. The installation obtains over 3 percent of its energy needs from solar panels and is currently researching other sources of renewable energy for future use. Power for maneuvers and target training within the downrange area is supplied locally by battery or generator. The peak historical electrical demand at Fort Carson is 38.5 megavolt amperes (MVA) and the peak historical daily consumption of natural gas at Fort Carson is 9,329 million cubic feet (mcf)/day (261.2 million cubic meters [m₃]/day).

3.7.2 Environmental Consequences

The proposed action includes electrical and communication fiber connectivity, but does not include supplying water to the complex. The latrines would be compost latrines (dry vault). There would be no adverse impacts to potable water, wastewater, or natural gas.

3.7.2.1 Proposed Action

There would be no adverse impact on energy sources. An increase in use of electricity would occur. This increased electrical demand would be within Colorado Springs Utilities' ability to provide energy and Fort Carson's ability to transmit. Short-term, construction wastes generated by the UAS training complex implementation would be disposed of in a designated off-post landfill.

3.7.2.2 No Action Alternative

Under the No Action Alternative, there would be no change to utilities than what currently exist.

3.7.4 Cumulative Effects

Present and future actions would result in an increased demand for utilities. Increasing population and development has increased utility usage within Fort Carson and the region.

3.7.5 Site-specific Mitigation

Use of the installation's sustainability goals would minimize impacts to energy sources. Debris that is not recycled would be disposed of in accordance with the *Integrated Solid Waste Management Plan* (Fort Carson 2011a).

4.0 SUMMARY OF EFFECTS AND CONCLUSIONS

4.1 Unavoidable Adverse Effects Should the Proposed Action Be Implemented

Some adverse effects due to construction cannot be avoided if the Proposed Action is implemented. Disturbance of soils and vegetation would occur, and these effects would be cumulative and long-term. There would be negligible impact to US jurisdictional waters and/or wetlands, however Section 404 of the CWA is required to minimize any potential impacts. There would be minimal effects to federal- or state-listed species. There is potential for disturbance to the golden eagle pair that frequently hunt in the area. There is a minimal potential for negative impacts to utilities.

Table 4.1 summarizes potential effects for each alternative, after mitigation. Environmental effects would not be significant within the larger geographic and temporal context in which they would take place.

Table 4.1 Summary of Potential Environmental Consequences

Resource Area	Environmental Consequence	
	No Action Alternative	Proposed Action
Air Quality and GHG	No effect	Negative during construction
Soils	No effect	negative, but mitigatable
Water Resources	No effect	Slightly negative, but mitigatable
Biological Resources	No effect	negative, but mitigatable
Cultural Resources	No effect	Slightly negative, but mitigatable
Utilities	No effect	Slightly negative

* No effect: Actions have no known demonstrated or perceptible effects
Negative: Actions have apparent negative effects

4.2 Irreversible and Irretrievable Commitments of Resources

The Proposed Action would involve no irreversible or irretrievable commitment of resources other than the consumption of various expendable materials, supplies, and equipment associated with construction and implementation of environmental mitigation measures.

4.3 General Mitigations

Fort Carson practices sustainability, land rehabilitation, BMPs, and many other management strategies to avoid, minimize, and/or reduce potential negative impacts. These practices will continue and will be implemented as part of the Proposed Action.

4.4 Conclusions

The Proposed Action to construct the UAS training complex at TA17N on Fort Carson was analyzed by comparing potential environmental consequences against existing conditions. Findings indicate that implementation of the Proposed Action would result in no significant adverse environmental consequences. The affected environment would not be significantly or adversely effected by proceeding with the Proposed

Action. No significant cumulative effects would be expected with implementation of mitigation.

Based on this EA, implementation of the Proposed Action (*i.e.*, construct the UAS training complex on TA17N, Fort Carson) would have no significant negative environmental or socioeconomic effects. Satisfaction of the Army's significant need to provide up-to-date and realistic training at Fort Carson is considered to outweigh the relatively minor environmental impacts. The Proposed Action does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, preparation of an environmental impact statement is not required, and preparation of a Finding of No Significant Impact is appropriate.

5.0 PERSONS CONTACTED

Name	Installation/ Affiliation	Role
Altepeter, Lana	Fort Carson/ Environmental (ENV)	Air Program Manager (PMGR)
Allen, Rebekah	Fort Carson/ENV	IRP Assistant
Benford, James	Fort Carson/ DPTMS	Plans, Training, Mobilization, and Security (PTMS), Director
Camp, Mike	Fort Carson/DPTMS	Range Control Deputy
Clark, Scott	Fort Carson/DPW	Energy Program Coordinator
Davis, Alan	Fort Carson/DPW	Electrical Engineering Technician
Davis, Bert	Fort Carson/DPTMS	Range Control Officer
Dunker, Eric	Fort Carson/ENV	Water Program Support Specialist
Gallegos, Joseph	Fort Carson/ENV	Compliance Branch Chief
Goss, Brian	Fort Carson/ENV	Natural Resource Specialist
Grams, Calvin	Fort Carson/DPW	Engineering Tech/GIS
Guthrie, Vincent	Fort Carson/DPW	Utility PMGR
Haflett, Jack	Fort Carson/ENV	NEPA Coordinator
Hennessy, William	Fort Carson/SJA	Environmental Law Specialist
Hooper, William	Fort Carson/ DPTMS	Chief of Training
Kluever, Bryan	Fort Carson/ENV	Wildlife Biologist
Kritz, Kevin	USFWS, Region 6	Wildlife Biologist
Kulbeth, James	Fort Carson/ENV	Sec 404/Watershed PMGR
Linn, Jeff	Fort Carson/ENV	Natural Resources Branch Chief
Martin, David	Fort Carson/ENV	Asbestos/Lead/Radon PMGR

Miller, Pamela	Fort Carson/ENV	Cultural Resources PMGR
Noonan, Harold	Fort Carson/ENV	Wastewater PMGR
Peyton, Roger	Fort Carson/ENV	Natural Resources Section Chief
Rohrs, Suzanne	Fort Carson/ENV	Stormwater PMGR
Thomas, Wayne	Fort Carson/ENV	NEPA/Cultural Branch Chief
Whiting, Betty	Fort Carson/ENV	Archaeologist
Wiersma, Thomas	Fort Carson/DPW	Community Planner
Zayatz, Jason	Fort Carson/ENV	Installation Forester

6.0 REFERENCES

5 Code of Colorado Regulations (CCR) 1002-93, Colorado Regulation #93

32 CFR Part 651, *Environmental Analysis of Army Actions* (AR 200-2).

40 CFR Part 761. *Protection of Environment*

40 CFR Parts 1500-1508. *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. Council on Environmental Quality. 1997.

50 CFR Part 21. Final Rule, *Migratory Bird Permits; Take of Migratory Birds by the Armed Forces*. 2007

Colorado Department of Public Health and Environment (CDPHE). 2009. Revised Carbon Monoxide Attainment/Maintenance Plan, Colorado Springs Attainment / Maintenance Area.

Colorado Department of Public Health and Environment (CDPHE). 2011. Letter of Approval on the *2011 Final Site Wide Selenium Study, Occurrence and Distribution of Selenium in Groundwater*, Fort Carson, CO.

Council on Environmental Quality (CEQ). 1978. Regulations for Implementing the National Environmental Policy Act (40 CFR Parts 1500-1508)

Fort Carson Regulation 200-1. 2013. *Environmental Quality Environmental Management and Protection*.

Fort Carson. 2004. November 2004 Environmental Assessment for the Construction and Operation of a Tactical Unmanned Aerial Vehicle Support Complex. Prepared by Gene Stout and Associates for Fort Carson, CO.

_____.2007. Fort Carson Transformation Environmental Impact Statement. Prepared by U.S. Army Corps of Engineers, Mobile AL with assistance from CH2M Hill., for Fort Carson, Colorado. June 2007.

_____. 2009. Final Environmental Impact Statement for Implementation of Fort Carson Grow the Army Stationing Decisions. February 2009. Prepared by Fort Carson and U.S. Army Environmental Command with assistance by Potomac-Hudson Engineering, Inc. Available on the Web at: <http://www.carson.army.mil/DPW/nepa.html>

_____. 2011a. *Integrated Solid Waste Management Plan*, Fort Carson. Department of the Army. 2011. Fort Carson, Colorado.

_____. 2011b. *Integrated Wildland Fire Management Plan*, Fort Carson and Piñon Canyon Maneuver Site. Department of the Army. 2011. Fort Carson, Colorado.

_____. 2012. Fort Carson Combat Aviation Brigade Stationing Implementation Final Environmental Assessment and Finding of No Significant Impact. July 2012. Prepared by Fort Carson and U.S. Army Environmental Command with assistance by Potomac-Hudson Engineering, Inc. Available on the Web at: <http://www.carson.army.mil/DPW/nepa.html>

_____. 2012b. *Fort Carson Fugitive Dust Control Plan*, March 2012. Prepared and approved by Fort Carson, CO. 2011.

_____. 2012c. Fort Carson Net Zero Waste, Water, and Energy Implementation Final Environmental Assessment and Finding of No Significant Impact. July 2012. Prepared by Fort Carson and U.S. Army Environmental Command with assistance by Potomac-Hudson Engineering, Inc.

_____. 2013. Fort Carson and Piñon Canyon Maneuver Site Integrated Natural Resources Management Plan, 2013-2017, September 2013. Fort Carson, Colorado.

_____. 2014. Programmatic Agreement Among U.S. Army Garrison Fort Carson, Colorado State Historic Preservation Officer and the Advisory Council on Historic Preservation Regarding Military Training and Operational Support Activities Down Range Fort Carson, Colorado. March 2014. Fort Carson, Colorado.

_____. 2016. Stormwater Management Plan, Fort Carson, Colorado. Updated Jan 2016. <http://www.carson.army.mil/DPW/environmental/stormwater/documents/20130401-SWMP.pdf>

Summit Technical Resources, Inc. (Summit). 2011. *Final Site Wide Selenium Study Occurrence and Distribution of Selenium in Groundwater, Fort Carson, Colorado*. November 2011.

Title 42 United States Code (U.S.C.) Sec. 4321 et seq. The National Environmental Policy Act of 1969.

U.S. Army Public Health Command (USAPHC). 2012. *U.S. Army Fort Carson Installation Operational Noise Management Plan*. Prepared for Fort Carson, Colorado. July 2012.

U.S. Dept. of the Army, Headquarters. 2006. Field Manual 3-21.20; *The Infantry Battalion*. Appendix K. Prepared by U.S. Army Infantry School for U.S. Army Training and Doctrine Command. December 2006.

U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS). 2016. Web Soil Survey (WSS). USDA NRCS, Washington, D.C. Available from <http://websoilsurvey.nrcs.usda.gov/app/>

Walker, J.M., et.al. 1997 Parthenogenic *Chemidoplorus Tesselatus* Complex (Sauria: *Teiidae*): A Neotype for Diploid *C. Tesselatus* (Say, 1823), Redescription of the Taxon, and Description of a New Triploid spp. *Herpetologica* 53(2), 233-259.

7.0 ACRONYMS

Acronym	Definition
AOI	Areas of Interest
APE	Area of Potential Effects
AR	Army Regulation
BMPs	Best Management Practices
CAA	Clean Air Act
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO2	Carbon Dioxide
CWA	Clean Water Act
DZ	Drop Zone
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
FNSI	Finding of No Significant Impact
GHG	Green House Gas
IFs	Isolated Finds
NAAQS	National Ambient Air Quality Standard
NAGPRA	Native American Graves Protection and Repatriation Act

NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NOI	Notice of Intent
NOx	Nitrogen oxide
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSR	New Source Review
PCMS	Piñon Canyon Maneuver Site
PM	Particulate Matter
PMGR	Program Manager
PRTCI	Properties of Religious, Traditional, and Cultural Importance
SO2	Sulfur Dioxide
SOP	Standard Operating Procedure
SWMP	Stormwater Management Plan
TCP	Traditional Cultural Places
USACE	US Army Corps of Engineers
USAEC	U.S. Army Environmental Command
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
µm	Micrometers
VEC	Valued Environmental Component
WWTP	Wastewater Treatment Plant

APPENDIX A – Comments Received and Responses

No comments were received.

APPENDIX B – Fort Carson Cultural Resources Program
Section 106 Correspondence

TRIBAL
HISTORIC
PRESERVATION
OFFICE



P.O. BOX 167
CONCHO, OKLAHOMA 73022
1800-247-4612 Toll Free
405-422-7484 Telephone

06/06/16

Pamela Miller,
Cultural Resources Manager
Department of the Army
1626 Evans Street, Bldg 1219
Fort Carson, CO 80915

Dear Ms. Miller

Re: Construction and Operation of an Unmanned Aerial Systems (UAS) Training
Complex in Training Area (TA) 17 North on Fort Carson (REC2016-206)

On behalf of the Cheyenne and Arapaho Tribes, thank you for the notice of the
referenced project. I have reviewed your Consultation request under Section 106 of the
National Historic Preservation Act regarding the project proposal and commented as
follows:

At this time it is determined to be **No Properties**; however, if at any time during the
project implementation inadvertent discoveries are made that reflect evidence of human
remains, ceremonial or cultural objects, historical sites such as stone rings, burial mounds,
village or battlefield artifacts, please discontinue work and notify the THPO Office
immediately. If needed, we will contact the Tribes NAGPRA representatives.

Please continue to keep us informed of any changes on the project in the future.

Best Regards,

Margaret Sutton, Tribal Historic Preservation Officer
Cheyenne-Arapaho Tribes of Oklahoma
msutton@c-a-tribes.org
405-422-7484

Cc: Max Bear, Director,
Cultural & Heritage Program



COLORADO COUNCIL OF PROFESSIONAL ARCHAEOLOGISTS

Pamela Miller Wayne Thomas
Cultural Resources Chief, NEPA and Cultural
Manager Management Branch
DPW-Environmental
1626 Evans Street, Building 1219
Fort Carson, CO 80913-4143

Date: May 31, 2016

CC: Nathan Boyless (CCPA President), Michael Berry (CCPA Past President), Mark Tobias,
Amy Pallante, Betty Whiting

RE: Construction and Operation of an Unmanned Aerial Systems (UAS) Training Complex in
Training Area (TA) 17 North on Fort Carson

To Whom It May Concern,

This letter confirms that the CCPA has reviewed the proposed construction of UAS Training Complex in TA 17 North on Fort Carson. No historic properties are in the Areas of Potential Effect (APE). However, four prehistoric cultural resources are identified nearby. Of these, two are prehistoric isolated finds (5EP5948 and 5EP5953), one site (5EP5973) is a small prehistoric lithic scatter, and one site (5EP5974) is a prehistoric open architectural site. The architecture site is the only resource that is officially eligible for the inclusion in the National Register of Historic Places (NRHP). It is 230 meters from the APE and situated on a separate landform. Because of these reasons, it does not present any concern to the proposed project. As a result, the CCPA representative supports the Fort Carson Cultural Resources Manager's determination of *no adverse effect* to historic properties.

Sincerely,

Cody M. Anderson
Colorado Council of Professional Archaeologists, Representative
970-443-4220

-----Original Message-----

From: Theodore Villacana [<mailto:theodorev@comanchenation.com>]

Sent: Wednesday, May 25, 2016 7:52 AM

To: Miller, Pamela K CIV (US) <pamela.k.miller26.civ@mail.mil>

Subject: [Non-DoD Source] Consult Response for - RE: Fort Carson Section 106 Review - UAS Complex in TA 17 (REC2016-206)

Dear Ms. Miller :

In response to your request, the above reference project has been reviewed by staff of this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, where an indication of "No Properties" have been identified. (IAW 36 CFR 800.4(d)(1)).

Please contact this office at (580) 595-9960/9618 if you require additional information on this project.

This review is performed in order to identify and preserve the Comanche Nation and State cultural heritage, in conjunction with the State Historic Preservation Office.

Regards

Comanche Nation Historic Preservation Office Theodore E. Villicana ,Technician

#6 SW "D" Avenue , Suite C

Lawton, OK. 73502



June 21, 2016

James Lizzard
Chief, Environmental Division
Department of the Army
US Army Installation Management Command
Directorate of Public Works
1626 Evans Street, Building 1219
Fort Carson, Colorado 80913-4143

Re: Construction and Operation of an Unmanned Aerial Systems (UAS) Training Complex in Training Area (TA) 17 North on Fort Carson (REC-2016-206) (HC #70297)

Dear Mr. Lizzard:

Thank you for your correspondence dated May 17, 2016 and received by our office on May 23, 2016 requesting our review and comment on the subject undertaking.

In consideration of the information that we currently have on file for the area of potential effects, we concur with your determination that the undertaking will result in no adverse effect pursuant to 36 CFR 800.5(b).

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings. Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register eligibility criteria (36 CFR 60.4) in consultation with our office.

Thank you for the opportunity to comment. If we may be of further assistance please contact Mark Tobias, Section 106 Compliance Manager, at (303) 866-4674 or mark.tobias@state.co.us.

Sincerely,

Steve Turner, ALA
State Historic Preservation Officer
ST/mt

From: [Tom Warren](#)
To: [Miller, Pamela K CTV \(US\)](#)
Subject: [Non-DoD Source] Re: Fort Carson Section 106 Review - UAS Complex in TA 17 (REC2016-206)
Date: Tuesday, June 14, 2016 11:02:48 AM

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

Pam: Much appreciate the opportunity to review. I have no issues and/or recommendations. Good luck with the effort. tom

On Tue, May 17, 2016 at 1:33 PM, Miller, Pamela K CTV (US) <pamela.k.miller26.civ@mail.mil <
Caution-<mailto:pamela.k.miller26.civ@mail.mil> > > wrote:

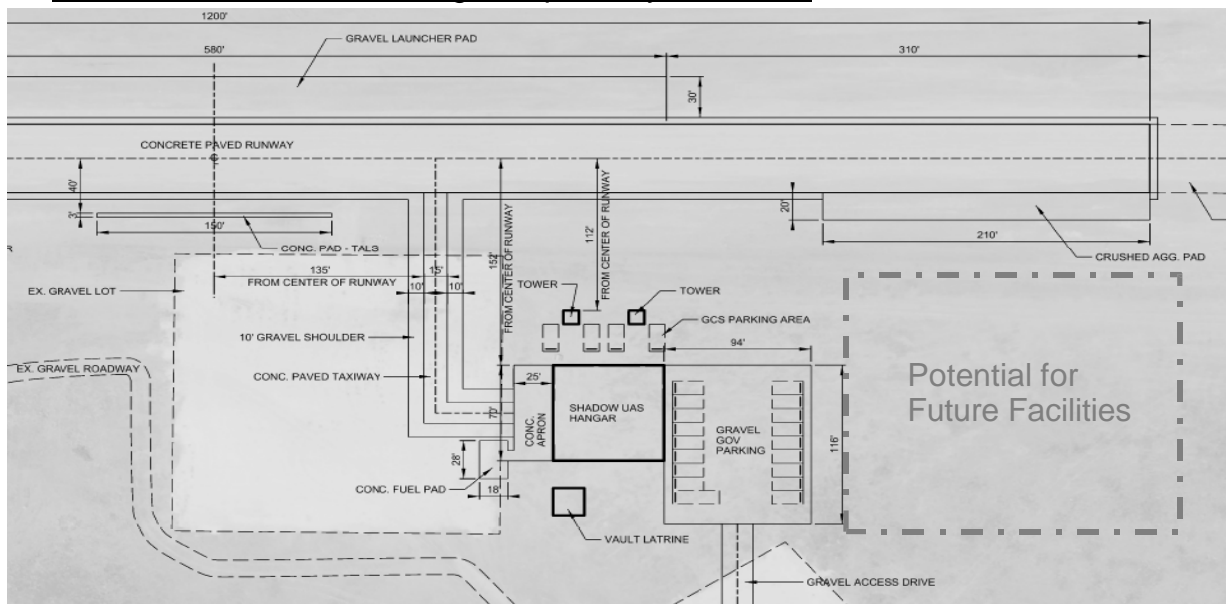
All:

Good afternoon. Please find attached a Section 106 review packet for the construction of an Unmanned Aerial Systems Complex in Training Area 17 on Fort Carson. A hard copy has also been mailed to the Colorado SHPO. Responses should be forwarded no later than June 20, 2016. Please feel free to contact me if you have questions. Thank you.

V/r

Pamela Miller
Cultural Resources Manager
Fort Carson and the PCMS
719-526-4484 <tel:719-526-4484 > Office
719-510-6773 <tel:719-510-6773 > Cell

APPENDIX C – UAS Training Complex Layout Details



Unmanned Aerial Systems Training Complex:

UAS Shelter

Small Tower

Windsock

Latrine

Runway with paved overrun

Launcher

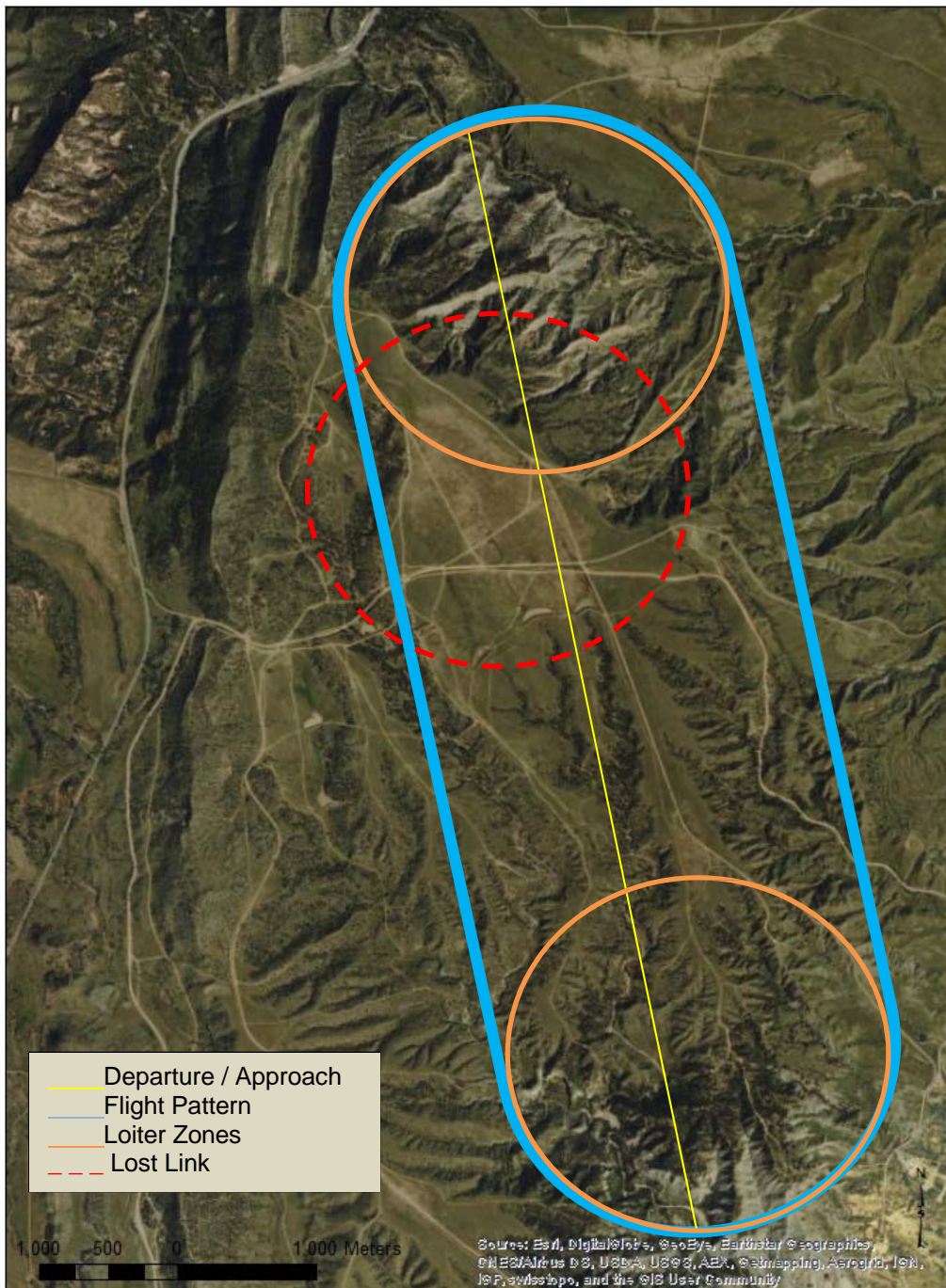
Tow way and parking area

Perimeter fencing

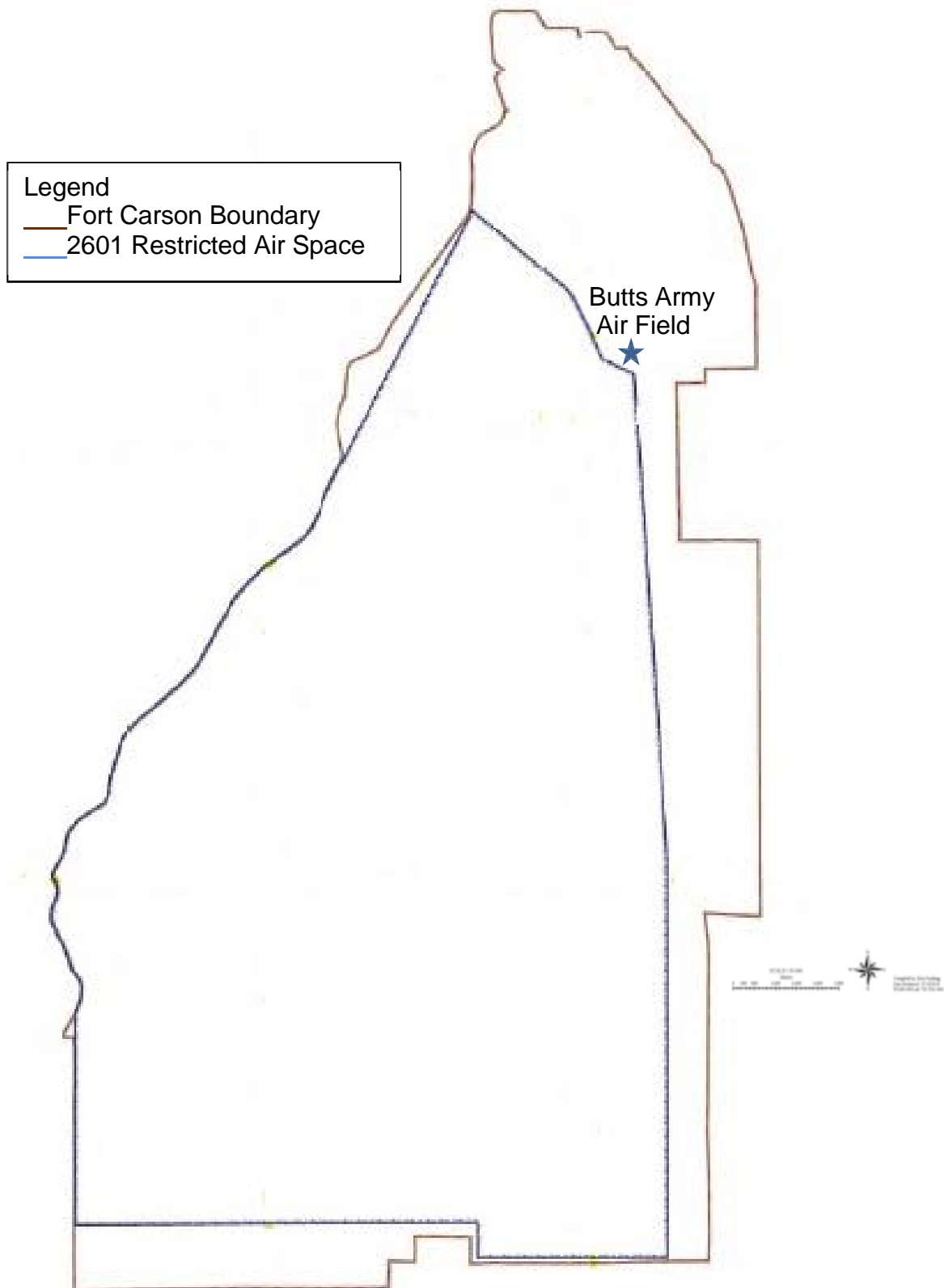
Proposed Layout of UAS Training Complex at TA 17 N, Fort Carson



Flight Pattern of the Proposed UAS at TA 17N, Fort Carson



Fort Carson Restricted Airspace



APPENDIX D –Actions/Projects Considered for Cumulative Impacts Assessment for Fort Carson, CO, 2016

Projects at Fort Carson

Completed or Almost Completed

- Battle Command Training Center and Athletic Field
- Special Forces Battalion (BN) Operations Facility Complex
- Special Forces Company Operations facilities (2)
- CAB air control tower, engine test facility, GSAB and ASB hangars, and barracks
- Range 111 Digital Multi-Purpose Training Range
- Assault BN maintenance hangar
- Vehicle bridge and road construction

In Progress – Fort Carson

- CAB associated construction including infrastructure – Ongoing through FY18
- Central Energy Plant
- Attack BN Maintenance Hangar
- Flight simulator facility
- National Institute Center of Excellence
- Special Forces Language Training Lab
- Air Support Operations Squadron Facility Expansion
- Iron Horse Park Area Development
- Family Housing deconstruction and rebuild in Cherokee Village
- Verizon Wireless tower construction

In Progress or Recently Completed – Off Post

- Sam's Club / Walmart Academy Boulevard South construction
- Southern Delivery System

Foreseeable Future

- Ammo Supply Point Expansion
- Automated infantry platoon battle course
- Battlefield weather support facility
- Charter Oak Ranch road improvement
- Cheyenne Mountain Trap/Skeet range addition
- Gate 20 Access Control Facility
- Infantry squad battle course
- Physical Fitness Facility
- Teller Dam Repair
- Tactical Austere UAS Airstrip
- UAS training complex expansion
- Vehicle maintenance facility (TEMF)

APPENDIX E – Fort Carson Training Area 17 North Soils Data
USDA NRCS Web Soil Survey, 2016

Soil Map-El Paso County Area, Colorado
(TA17 N Soils)

104° 50' 28" W

104° 49' 45" W

38° 38' 54" N

38° 38' 54" N



38° 38' 10" N

38° 38' 10" N

104° 50' 28" W

104° 49' 45" W



Map Scale: 1:6,730 if printed on A portrait (8.5" x 11") sheet.

0 50 100 200 300 Meters

0 300 600 1200 1800 Feet

Map projection: Web Mercator Corner coordinates: WGS84



Natural Resources
Conservation Service


Web Soil Survey
National Cooperative Soil Survey

2/29/2016
Page 1 of 3

Soil Map-El Paso County Area, Colorado
(TA17 N Soils)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)



Natural Resources
Conservation Service

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points


Special Point Features

 Blowout

 Borrow

Pit  Clay


Spot

 Closed Depression

 Gravel Pit

 Gravelly

Spot  Landfill

 Lava Flow

 Marsh or

swamp  Mine or


Quarry

 Miscellaneous

Water  Perennial


Water

 Rock


Outcrop 

Saline Spot 

Sandy Spot

 Severely Eroded

Spot  Sinkhole

 Slide or

Slip  Sodic

Spot

MAP INFORMATION



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US

Routes



Major Roads



Local

Roads

Background



Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

2/29/2016
Page 2 of 3

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources
Conservation Service Web Soil Survey
URL:

<http://websoilsurvey.nrcs.usda.gov> Coordinate System:
Web Mercator
(EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso
County Area, Colorado Survey
Area Data: Version
13, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed:
Apr 15, 2011-Sep 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

El Paso County Area, Colorado (CO625)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Bresser sandy loam, 3 to 5 percent slopes	48.0	41.5%
13	Bresser sandy loam, 5 to 9 percent slopes	5.9	5.1%
55	Nederland cobbly sandy loam, 9 to 25 percent slopes	61.7	53.4%
Totals for Area of Interest		115.5	100.0%